

AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original) A female coupler adapted to be connected to a male coupler comprising:
a coupler body having a cylindrical male coupler receiving portion for receiving a male coupler therein, and a fluid passage to be fluidly communicated with a fluid passage of the male coupler which has been received in said cylindrical male coupler receiving portion, said cylindrical male coupler receiving portion having a radial hole radially extending therethrough;
a locking member disposed in said radial hole and movable between
an engagement position wherein said locking member engages with a locking member receiving recess formed on the outer surface of the male coupler which has been inserted into said cylindrical male coupler receiving portion to thereby prevent the male coupler from being disengaged or moving out from said cylindrical male coupler receiving portion, and
a disengagement position wherein said locking member is positioned radially outwardly relative to said engagement position and disengages from the locking member receiving recess of the male coupler to thereby allow the male coupler to move out from said cylindrical male coupler receiving portion;
an outer movable member mounted on said cylindrical male coupler receiving portion, said outer movable member being axially movable between
a locking position wherein said outer movable member urges said locking member to said engagement position, and
an unlocking position wherein said outer movable member allows said locking member to move to said disengagement position; and,
a securing member for engaging with and securing said outer movable member to said unlocking position, said securing member being disengaged from said outer movable member to allow said outer movable member to move to said locking position when the locking member receiving recess has been moved to an axial position for receiving said locking member.

2. (Original) A female coupler as set forth in claim 1 further comprising:
an inner movable member disposed in said cylindrical male coupler receiving portion, said inner movable member being axially movable between
an advanced position wherein said inner movable member engages with said locking member to hold said locking member in said disengagement position, and
a retracted position for allowing said locking member to move to said engagement position; and,
a first urging member for urging said inner movable member towards said advanced position;
said inner movable member being moved from said advanced position to said retracted position by the male coupler inserted into said cylindrical male coupler receiving portion and, when the male coupler has been moved to a position wherein the locking member receiving recess thereof is located at an axial position for receiving said locking member, allowing said securing member to disengage from said outer movable member.
3. (Withdrawn) A female coupler as set forth in claim 1 further comprising:
a member for urging said outer movable member from said unlocking position towards said locking position.
4. (Original) A female coupler as set forth in claim 1 further comprising:
an inner movable member disposed in said cylindrical male coupler receiving portion, said inner movable member being axially movable between
a retracted position wherein said inner movable member has been moved rearwards by the male coupler which has been inserted into said cylindrical male coupler receiving portion so that said locking member receiving recess thereof has been moved to an axial position for receiving said locking member therein; and,
an advanced position closer to said locking member than said retracted position;
a first urging member for urging said inner movable member towards said advanced position;
said inner movable member urging said securing member radially outwards to make said securing member securely engaged with said outer movable member at the unlocking

position, and allowing said outer movable member to move to said locking position when said inner movable member has been moved rearwards a predetermined distance from said advanced position.

5. (Original) A female coupler as set forth in claim 1 wherein:

said cylindrical male coupler receiving portion is engaged by and prevented by the male coupler from effecting a further advancement when the male coupler has been received into said cylindrical male coupler receiving portion upon advancement of said female coupler towards said male coupler so that the locking member receiving recess has been moved to an axial position for receiving said locking member; and

said female coupler further comprises a handle fixedly connected to said outer movable member, said handle enabling an operator to hold said female coupler by grasping said handle for coupling said female coupler with the male coupler.

6. (Original) A female coupler as set forth in claim 1 wherein:

said handle comprises a pair of grip members, separated from each other in the transverse direction of the female coupler, positioned at the rearward of the female coupler and connected to opposite lateral sides of said outer movable member.

7. (Original) A female coupler adapted to be connected to a male coupler comprising:

a coupler body having a cylindrical male coupler receiving portion adapted to receive a male coupler therein, and a fluid passage to be fluidly communicated with a fluid passage of the male coupler which has been received in said cylindrical male coupler receiving portion, said cylindrical male coupler receiving portion having a radial hole;

a locking member disposed in said radial hole and movable between

an engagement position wherein said locking member engages with a locking member receiving recess formed on the outer surface of the male coupler which has been inserted into said cylindrical male coupler receiving portion to thereby prevent the male coupler from being disengaged or moving out from said cylindrical male coupler receiving portion, and

a disengagement position wherein said locking member is positioned radially outwardly relative to said engagement position and disengages from the

locking member receiving recess of the male coupler to thereby allow the male coupler to move out from said cylindrical male coupler receiving portion;
an outer movable member mounted on said cylindrical male coupler receiving portion, said outer movable member being axially movable between

a locking position wherein said outer movable member urges said locking member to said engagement position, and

an unlocking position wherein said outer movable member allows said locking member to move to said disengagement position;

a handle fixedly connected to said outer movable member, said handle enabling an operator to hold said female coupler by grasping said handle for coupling said female coupler with the male coupler; and,

a holding member for engaging with and holding said outer movable member to said unlocking position, said holding member being disengaged from said outer movable member to allow said outer movable member to move to said locking position when the male coupler has been inserted into said cylindrical male coupler receiving portion and reached a position wherein the locking member receiving recess is located at an axial position for receiving said locking member;

said cylindrical male coupler receiving portion being engaged by and prevented by the male coupler from effecting a further advancement when the male coupler has been inserted into said cylindrical male coupler receiving portion upon advancement of said female coupler towards the male coupler and reached a position wherein the locking member receiving recess is located at an axial position for receiving said locking member.

8. (Original) A female coupler as set forth in claim 7 further comprising:

an inner movable member disposed in said cylindrical male coupler receiving portion, said inner movable member being axially movable between

an advanced position wherein said inner movable member engages with said locking member to hold said locking member in said disengagement position, and

a retracted position for allowing said locking member to move to said engagement position; and,

a first urging member for urging said inner movable member towards said advanced position;

said locking member functioning as said holding member in such a manner that said locking member holds said outer movable member at said unlocking position when said locking member is located at said disengagement position and allows said outer movable member to said locking position when said locking member is located at said engagement position.

9. (Original) A female coupler as set forth in claim 8 wherein:

said outer movable member is cylindrical and coaxial with said cylindrical male coupler receiving portion and has an interior surface slidably engaged with an exterior surface of said cylindrical male coupler receiving portion, said interior surface having a locking portion urging said locking member to said engagement position when said outer movable member is located at said locking position and a recess for receiving said locking member when said outer movable member is located at said unlocking position.

10. (Original) A female coupler as set forth in claim 7 further comprising:

an inner movable member disposed in said cylindrical male coupler receiving portion, said inner movable member being axially movable between

a retracted position wherein said inner movable member has been moved rearwards by the male coupler which has been inserted into said cylindrical male coupler receiving portion so that said locking member receiving recess thereof has been moved to an axial position for receiving said locking member therein; and,

an advanced position closer to said locking member than said retracted position;
a first urging member for urging said inner movable member towards said advanced position;

said inner movable member urging said securing member radially outwards to make the securing member engaged with and securing said outer movable member at said unlocking position, and allowing said outer movable member to move to said locking position when said inner movable member has been moved to said retracted position by the male coupler.

11. (Withdrawn) A female coupler as set forth in claim 7 further comprising a second urging member for urging said outer movable member from said unlocking position towards said locking position.

12. (Original) A female coupler as set forth in claim 7 wherein:
said handle comprises a pair of grip members, separated from each other in the transverse direction of the female coupler, positioned at the rearward of the female coupler and connected to opposite lateral sides of said outer movable member.